

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

THREE NEW FOXES OF THE KIT AND DESERT
FOX GROUPS.

BY C. HART MERRIAM.

The collections of the U. S. Biological Survey contain Kit Foxes from the plains from Alberta to Colorado; and long-eared Foxes from the deserts of New Mexico, and thence westerly to the interior of California. The study of this material shows that the Canadian Kit Fox should be separated as a subspecies from *Vulpes velox*, that the Desert Fox of New Mexico and western Texas is a strongly marked subspecies of *V. macrotis*, and that the one inhabiting the San Joaquin Valley is a distinct species, as follow:

***Vulpes velox hebes* subsp. nov.**

Type from Calgary, Alberta, Canada. No. 108,255 ♂ yg. ad., U. S. National Museum, Biological Survey Collection. Collected October 8, 1900 by Mackay and Dippie. Original No. 560(2890x).

Characters.—Similar to *velox* but decidedly larger and slightly grayer; dark patches on sides of nose darker; skull larger and heavier; palate much longer; underjaw longer, heavier, more bellied under sectorial tooth; coronoid processes higher. Young in September with back of head and middle of back very red.

Measurements.—Type specimen, ♂: total length 844; tail vertebræ 312; hind foot 130. Average of 4 males from the type locality: total

length 844; tail vertebræ 280; hind foot 131. Average of 2 females from type locality: total length 844; tail vertebræ 280; hind foot 122.

***Vulpes macrotis neomexicanus* subsp. nov.**

Type from San Andreas Range, New Mexico (about 50 miles north of El Paso). No. 98,646 ♂ ad., U. S. National Museum, Biological Survey Collection. Collected April 4, 1899 by C. Barber. Original No. 2055x.

Characters.—Similar to *macrotis* but larger. Skull and teeth larger and heavier.

Cranial characters.—Compared with *macrotis* the skull is slightly larger and decidedly heavier and broader; rostrum much thicker; frontals broader; zygomata more spreading; bullæ larger and heavier with anteriorly projecting point on inner side; under jaw decidedly heavier and more bellied; coronoid process higher.

Curiously enough the skull resembles that of *muticus* from the distant San Joaquin Valley much more closely than it does that of its near neighbor, *macrotis*. Contrasted with *muticus* it is slightly smaller; bullæ larger with anteriorly projecting point on inner side; under jaw less deeply bellied; crowns of lower premolars longer (especially the 3d and 4th) so that the lower premolars are in contact or nearly so, while in *muticus* they are widely spaced, even more so than in *macrotis*.

Measurements.—Adult female from Fort Grant, Arizona (measured in flesh by Dr. B. H. Dutcher): total length 820; tail vertebræ 300; hind foot 135. No measurements of male available.

***Vulpes muticus* sp. nov.**

Type from Tracy, San Joaquin Valley, California. No. 75,828 ♂ ad., U. S. National Museum, Biological Survey Collection. Collected Nov. 5, 1895 by George Leonard.

Characters.—Similar to *macrotis* but decidedly larger; hind foot and tail longer; chin and under lip blacker; top of head and middle of back with more reddish brown showing through between grayish tips; outer side of hind foot more fulvous; top of hind foot less white; pectoral collar more pronounced; black tip of tail less extensive on underside.

Cranial characters.—Skull larger, broader, and more massive; frontals flattened and thickened, forming a triangular shield which in adults reaches to parietals; rostrum very much broader; postorbital processes larger and more massive; under jaw much heavier and more deeply bellied under sectorial and last premolar; carnassial teeth and molars larger and much heavier; premolars thicker but not otherwise larger.

Measurements.—Type specimen ♂ ad. (a well made study skin): total length 950; tail vertebræ 350; hind foot 122 [in flesh at least 126].